



10/004874

C9C

FERRELLS, PLLC

A Virginia Professional Corporation
Practice Limited to Intellectual Property Matters

Michael William Ferrell
4400 Fair Lakes Court
Suite 201
Fairfax, Virginia 22033-3899

September 9, 2005.

Telephone: 703-968-8600
Facsimile: 703-968-5500
E-mail: mike@ferrellaw.com
Website: www.ferrellaw.com

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Re: *Request for Certificate of Correction* for
United States Patent No. 6,893,693 B2
Issued May 17, 2005
Dean P. Swoboda et al.
entitled *High Gloss Disposable Pressware*
Our Reference 2251 (FJ-00-9)

Certificate
SEP 16 2005
of Correction

Sir:

Attached hereto is a proposed *Certificate of Correction* in the above-noted patent, together with the attached sections of the patent wherein the errors are highlighted thereon.

Please issue a *Certificate of Correction* pursuant to 35 USC 254 to correct these mistakes, some of which occurred through the fault of the United States Patent and Trademark Office and some of which occurred through Applicant's mistakes. All corrections are of a typographical nature and are believed appropriate subject matter for a *Certificate of Correction*.

Please charge Deposit Account No. 50-0935 for any fees in connection with this matter.

Sincerely,

Michael W. Ferrell
Reg. No. 31,158

/crm

Attachments

SEP 19 2005

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,893,693 B2

DATED : May 17, 2005

INVENTOR(S) : Dean P. Swoboda et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 5, line 9, change "CLEAROLS.RTM." TO --CLEAROL.RTM.--;

In Column 5, line 59, change "styrene/butadiene" to --styrene-butadiene--;

In Column 5, line 64, delete the first instance of "of";

In Column 6, line 27, change "poly(4-carboxyphenylmethacrylamide)" to --poly(4-carboxyphenylmethacrylamide)--; and

In Column 7, line 35, change "dies" to --die--.

MAILING ADDRESS OF SENDER (Please do not use customer number

Michael W. Ferrell, Esq. - Reg. No.
Ferrells, PLLC
P.O. Box 312
Clifton, Virginia 20124-1706
Telephone: 703-968-8600



PATENT NO. 6,893,693 B2

No. of additional copies

→ 0

SEP 19 2005

CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8)Applicant(s): **Dean Swoboda et al.**

Docket No.

2251 (FJ-00-9)

Application No.

10/004,874

Filing Date

December 7, 2001

Examiner

M.A. Patterson

Customer No.

40256

Group Art Unit

1772Invention: **HHG GLOSS DISPOSABLE PRESSWARE**

I hereby certify that this **Letter re Cert. of Corr., Cert. of Corr., pages from patent & return postcard**
(Identify type of correspondence)

is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope
addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on
September 9, 2005
(Date)

Carol R. Maddaloni

(Typed or Printed Name of Person Mailing Correspondence)

(Signature of Person Mailing Correspondence)

Note: Each paper must have its own certificate of mailing.

RTM. GUMS MV," "POLARIS.RTM. GUMS LV," "ASTRO.RTM. X 50," "ASTRO.RTM. X 100," "ASTRO.RTM. X 101," "ASTRO.RTM. X 200," "ASTRO.RTM. GUM 21," "CALENDER SIZE 2283," "DOUGLAS.RTM.-COOKER-3006," "DOUGLAS.RTM.-COOKER 3007," "DOUGLAS.RTM.-COOKER-3012-T," "DOUGLAS.RTM.-COOKER-3018," "DOUGLAS.RTM.-COOKER 3019," "DOUGLAS.RTM.-COOKER 3040," "CLEAR SOL.RTM. GUMS 7," "CLEAR SOL.S.RTM. GUMS-8," "CLEAR SOL.RTM. GUMS 9," "CLEAR SOL.RTM. GUMS 10," "DOUGLAS.RTM.-ENZYME 3622," "DOUGLAS.RTM.-ENZYME E-3610," "DOUGLAS.RTM.-ENZYME E-3615," "DOUGLAS.RTM.-ENZYME-3022," "DOUGLAS.RTM.-ENZYME-3023," "DOUGLAS.RTM.-ENZYME 3024," "DOUGLAS.RTM.-ENZYME-E," "DOUGLAS.RTM.-ENZYME-EC," "CROWN THIN BOILING X-10," "CROWN THIN BOILING X-18," "CROWN THIN BOILING XD," "CROWN THIN BOILING XF," "CROWN THIN BOILING XH," "CROWN THIN BOILING XI," "CROWN THIN BOILING XL," "CROWN THIN BOILING XN," "CROWN THIN BOILING XP," "CROWN THIN BOILING XR," "DOUGLAS.RTM.-UNMODIFIED PEARL," and "DOUGLAS.RTM.-UNMODIFIED 1200." These sizing agents are all commercially available from Penford Products Co. "PENFORD.RTM.," "PENCOTE.RTM.," "PENSRAE.RTM.," "PENGLOSS.RTM.," "APOLLO.RTM.," "ASTRO.RTM.," "ASTRO.COTE.RTM.," "POLARIS.RTM.," "DOUGLAS.RTM.," and "CLEAR SOL.RTM." are all registered trademarks of Penford Products Co. Other suitable starches, including "SILVER MEDAL PEARL.TM.," "PEARL B.," "ENZO 32 D.," "ENZO 36W," "ENZO 37D," "SUPERFILM 230D," "SUPERFILM 235D," "SUPERFILM 240DW," "SUPERFILM 245D," "SUPERFILM 270W," "SUPERFILM 280DW," "PERFORMER 1," "PERFORMER 2," "PERFORMER 3," "CALIBER 100," "CALIBER 110," "CALIBER 124," "CALIBER 130," "CALIBER 140," "CALIBER 150," "CALIBER 160," "CALIBER 170," "CHARGE +2," "CHARGE +4," "CHARGE +7," "CHARGE +9," "CHARGE +88," "CHARGE +99," "CHARGE +110," "FILMFLEX 40," "FILMFLEX 50," "FILMFLEX 60," and "FILMFLEX 70," are all commercially available from Cargill, Inc. Cofilm compositions which are film forming starch compositions available from National Starch are also preferred in some cases.

Following sizing, one or more clay coatings are typically applied to the paperboard substrate. A preferred clay coating may include 2 clay containing layers each having a coatweight of from about 4 to about 12 lbs per 3,000 square foot ream. Particular pigmented coatings are described in U.S. Pat. No. 5,776,619 to Shanton as noted above. It will be appreciated that the coatweight of such clay coatings is predominately due to the weight of the clay.

Following the base coat or coatings, a first finish coating consisting essentially of a styrene-butadiene resin composition is applied to the coated paperboard substrate. Any suitable styrene-butadiene containing resin composition may be used. A preferred resin composition includes a carboxylated styrene-butadiene resin. A particularly preferred resin is sold by Reichold under the Trademark Tykote 96038-00.

After the first finish coating is applied a second finish coating consisting essentially of an acrylic resin composition is applied to the first finish coating. By acrylic coating it is meant that any suitable acrylic emulsion may be used. Such emulsions are generally polymers of acrylic acid or its

derivatives and salts. Such compounds may include one or more of the following: polyacrylics and polyacrylic acids such as poly(benzyl acrylate), poly(butyl acrylate)(s), poly(2-cyanobutyl acrylate), poly(2-ethoxyethyl acrylate), poly(ethyl acrylate), poly(2-ethylhexyl acrylate), poly(fluoromethyl acrylate), poly(5,5,6,6,7,7,7-heptafluoro-3-oxaheptyl acrylate), poly(heptafluoro-2-propyl acrylate), poly(heptyl acrylate), poly(hexyl acrylate), poly(isobornyl acrylate), poly(isopropyl acrylate), poly(3-methoxybutyl acrylate), poly(methyl acrylate), poly(nonyl acrylate), poly(octyl acrylate), poly(propyl acrylate), poly(p-tolyl acrylate), poly(acrylic acid) and derivatives and salts thereof; polyacrylamides such as poly(acrylamide), poly(N-butylacrylamide), poly(N,N-dibutylacrylamide), poly(N-dodecylacrylamide), and poly(morpholylacrylamide); polymethacrylic acids and poly(methacrylic acid esters) such as poly(benzyl methacrylate), poly(octyl methacrylate), poly(butyl methacrylate), poly(2-chloroethyl methacrylate), poly(2-cyanoethyl methacrylate), poly(dodecyl methacrylate), poly(2-ethylhexyl methacrylate), poly(ethyl methacrylate), poly(1,1,1-trifluoro-2-propyl methacrylate), poly(hexyl methacrylate), poly(2-hydroxyethyl methacrylate); poly(2-hydroxypropyl methacrylate), poly(isopropyl methacrylate), poly(methacrylic acid), poly(methyl methacrylate) in various forms such as, atactic, isotactic, syndiotactic, and heterotactic; and poly(propyl methacrylate); polymethacrylamides such as poly(4-carboxyphenylmethacrylamide); other alpha- and beta-substituted poly(acrylics) and poly(methacrylics) such as poly(butyl chloracrylate), poly(ethyl ethoxycarbonylmethacrylate), poly(methyl fluoroacrylate), and poly(methyl phenylacrylate). Both finish coating layers should be FDA approved material.

The first finish coating layer and second top finish coating layer are typically water borne and press-applied, suitably by way of a printing-type apparatus. Suitable coating methods include gravure techniques, flexographic techniques, hydrophilic coating techniques, coil coating, trailing blade coating methods and so forth.

A typical coated paperboard structure 5 of the present invention includes paperboard 6, provided with a starch coating 8 on its upper and lower surfaces. The starch may or may not form a continuous film on the surface of paperboard 6 as shown and largely penetrates into the paperboard as shown by dotted lines 10 in the diagram, well toward the center of the fibrous paperboard structure.

On the food service side of the paperboard, there is provided atop starch 8 a first clay coating, typically a kaolin pigment coating 12 which includes a latex binder. A second clay coating 14 is advantageously applied to coating 12. Coating 14 is likewise predominately clay and includes a latex binder. The first finish coating 16 of the present invention is applied directly to coating 14 and the second finish or top coating 18 is applied directly to the first finish coating. First finish coating 16 consists essentially of a styrene-butadiene resin composition, whereas second or top finish 18 consists essentially of an acrylic resin composition as noted above.

The product of the invention is, in general, formed with a heated matched pressware die set, from paperboard plate stock of conventional thicknesses in the range of from about 0.010 to about 0.040 inches. The springs upon which the lower die half is mounted are typically constructed such that the full stroke of the upper die results in a force applied between the dies of from about 6000 to 8000 pounds. The paperboard which is formed into the blanks is conventionally produced by a wet laid paper making process and is typically available in the form of a continuous web on a roll.

7

The paperboard stock is preferred to have a basis weight in the range of from about 100 pounds to about 400 pounds per 3,000-square-foot-ream and a thickness or caliper in the range of from about 0.010 to about 0.040 inches. Lower basis weight paperboard is preferred for ease of forming and to save on feedstock costs. Paperboard stock utilized for forming paper plates is typically formed from bleached pulp furnish, and may be double clay coated on one side. Such paperboard stock commonly has a moisture (water content) varying from about 4.0 to about 8.0 percent by weight.

The effect of the compressive forces at the rim is greatest when the proper moisture conditions are maintained within the paperboard: at least 8% and less than 12% water by weight, and preferably 9.5 to 10.5%. Paperboard having moisture in this range has sufficient moisture to deform under pressure, but not such excessive moisture that water vapor interferes with the forming operation or that the paperboard is too weak to withstand the high compressive forces applied. To achieve the desired moisture levels within the paperboard stock as it comes off the roll, the paperboard is treated by spraying or rolling on a moistening solution, primarily water, although other components such as lubricants may be added. The moisture content may be monitored with a hand held capacitive type moisture meter to verify that the desired moisture conditions are being maintained. It is preferred that the plate stock not be formed for at least six hours after moistening to allow the moisture within the paperboard to reach equilibrium.

The stock is moistened on the uncoated side after all of the printing and coating steps have been completed. In a typical forming operation, the web of paperboard stock is fed continuously from a roll through a scoring and cutting die to form the circular blanks which are scored and cut before being fed into position between the upper and lower die halves. The die halves are heated as described above, to aid in the forming process. It has been found that best results are obtained if the upper die half and lower die half—particularly the surfaces thereof—are maintained at a temperature in the range of from about 250° F. to about 400° F., and most preferably at about 325° F.±25° F. These die temperatures have been found to facilitate the plastic deformation of paperboard in the rim areas if the paperboard has the preferred moisture levels. At these preferred die temperatures, the amount of heat applied to the blank is apparently sufficient to liberate the moisture within the blank under the rim and thereby facilitate the deformation of the fibers without overheating the blank and causing blisters from liberation of steam or scorching the blank material. It is apparent that the amount of heat applied to the paperboard will vary with the amount of time that the dies dwell in a position pressing the paperboard together. The preferred die temperatures are based on the usual dwell times encountered for normal production speeds of 30 to 60 pressings a minute, and commensurately higher or lower temperatures in the dies would generally be required for higher or lower production speeds, respectively.

As will be appreciated by one of skill in the art, the knock-outs are important for holding the container blank on center during formation and for separating the finished product from the die halves, particularly during high speed operation. There is shown in FIGS. 1 through 4 a metal die press 20 including an upper die press assembly 22, commonly referred to as a punch die assembly and a lower die assembly 24. That is, assembly 24 includes a mounting plate 26, a segmented die 28 with a knock-out 30, a sidewall forming section 32, a rim forming portion 34 and a draw ring 36. It will be appreciated that metal die press 20 is ordinarily

8

operated in an inclined state in accordance with the following United States Patents, the disclosures of which have been incorporated by reference into this application:

U.S. Pat. No. 5,326,020;

U.S. Pat. No. 5,249,946;

U.S. Pat. No. 4,832,676;

U.S. Pat. No. 4,721,500;

U.S. Pat. No. 4,721,499;

U.S. Pat. No. 4,609,140;

U.S. Pat. No. 4,606,496 The die set includes a plurality of

freely rotating stop pins 38, 40, 42 and 44. Each pin 38-44 is constructed of steel or other suitable material and includes an elongated shaft as well as a central bore. Bolts, preferably socket head shoulder bolts, are used to secure pins 38-44 to draw ring 36 of segmented die 28 as shown in FIG. 2. Referring to FIG. 3 there is shown a blank 46 provided with a plurality of scores 48 which are subsequently formed into pleats in the final product. That is to say, paperboard is gathered and pressed into a pleat about scores 48. The pleats preferably are of the same thickness as adjacent regions of the plate and are substantially radially coextensive with the scores from which they are formed. Products in accordance with the present invention thus preferably include a plurality of circumferentially spaced densified regions of integrated fibrous structures extending radially over the sidewall and rim; most preferably including at least about three layers of paperboard reformed into substantially integrated fibrous structures generally inseparable into their constituent layers and having a thickness generally equal to circumferentially adjacent areas of the rim.

As shown in FIG. 3 it would be appreciated that the rotating pin blank stops 38-44 are located on the forward portion of the lower die assembly 24, that is, the downstream production portion of the die, such that a gravity fed blank, such as blank 46, will contact the blank stops as shown. It could be seen that pins 38-44 are in opposing relationship at the periphery at the lower die at a distance which is less than the maximum transverse dimension of the blank, in this case the diameter of blank 46 since it is a circular blank and that pins 40 and 42 are also located at a distance which is also less than the diameter of the blank inasmuch as the plate will move in the direction indicated by arrow 50 in the production process, it is important that the rotating pin blank stops do not interfere with the motion of the finished product. After the blank is positioned as shown in FIG. 3, the top assembly 22 is lowered and the forming process is carried out in a conventional manner and the product 52 is formed as shown in FIG. 4. In FIG. 4 there is shown schematically a plurality of pleats 56 which correspond to scores 48. That is to say, the excess circumferential material from the planar paperboard blank gathers about scores 48 when a three-dimensional geometry is imparted to the product to form pleats 56 which thus have an amount of material therein corresponding to a plurality of paperboard layers. Preferably, this excess material is pressed into substantially integrated fibrous structures, that is, where pressed layers exhibit reduced void fractions as compared to the uncompressed board and are not readily separated into their constituent layers in normal use under the loads normally encountered in such use. Without wishing to be bound by any theory, it is believed the finish coatings of the present invention enhances the formation of strong pleats as reflected particularly by the enhanced rigidity of the inventive articles seen below.